ļ

$$(CH_3)_2N - (CH_3)_2N - (CH_$$

$$\begin{array}{c} \text{CH}_3 \\ \text{O} - (\text{CH}_2)_{2\text{-}6} - \text{O} \end{array}$$
 Psoralen

$$\begin{array}{c} CH_3O \\ \\ HN \\ \\ O \\ \\$$

$$\begin{array}{c} \text{CH}_3\text{O} \\ \text{CH}_3\text{O} \\ \text{HN} \\ \text{O}_2\text{N} \\ \text{NO}_2 \\ \end{array} \begin{array}{c} \text{CI} \\ \text{OH} \\ \text{O} \\ \text{O}$$

$$\begin{array}{c} O \\ HN \\ NH \\ S \\ O \\ \end{array}$$

Cholesterol

i

NC O P O CN

Phosphorylating reagent 1

Phosphorylating reagent 2

Fluorescein phosphoramidit 3 (monofunctional)

Biotin phosphoramidit 5 (monofunctional)

Biotin phosphoramidit 6 (bifunctional)

C16-phosphorylating reagent 7

Spacer-9 phosphoramidit 8

CN

$$N^+$$
 CI $N^ N^+$ CI $N^ N^ N^-$

Cyanin-3 phosphoramidit 10

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ &$$

Cyanin-5 phosphoramidit 11

$$\mathsf{Mmt} - \mathsf{N} \longrightarrow \mathsf{O} \longrightarrow \mathsf{CN}$$

Aminomodifier-5 phosphoramidit 12

$$\mathsf{Mmt} - \mathsf{N} \longrightarrow \mathsf{O} - \mathsf{P} \cap \mathsf{CN}$$

Aminomodifier-C6 phosphoramidit 13

D

$$\begin{array}{c} & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & &$$

Fig. 5b:

F

Dmt-O

Bishydroxyethylsulfonyl support 1

3'-Spacer-C3 support 2

DABCYL support 6

1. PNA synthesis

2. Phosphorylation

3. conc. ammonia

$$\mathsf{Mmt}\text{-}\mathsf{O} \underbrace{\left\{ \begin{array}{c} \mathsf{B} \\ \mathsf{PG} \\ \mathsf{N} \\ \mathsf{N} \\ \mathsf{N} \\ \mathsf{J}_{\mathsf{Z}''} \end{array} \right\}}_{\mathsf{PG}} \mathsf{PG}$$

$$\begin{array}{c|c}
CN & B & PG \\
O & O & N \\
O & N \\
C_{16}H_{33}
\end{array}$$